

### **ABSTRACT OF THE DISCLOSURE**

A CVD Method of forming gate dielectric thin films on a substrate using metalloamide compounds of the formula  $M(NR^1R^2)_x$ , wherein M is selected from the group consisting of: Zr, Hf, Y, La, Lanthanide series elements, Ta, Ti, Al; N is nitrogen; each of R1 and R2 is same or different and is independently selected from the group consisting of H, aryl, perfluoroaryl, C<sub>1</sub>-C<sub>8</sub> alkyl, C<sub>1</sub>-C<sub>8</sub> perfluoroalkyl, alkylsilyl and x is the oxidation state on metal M; and an aminosilane compound of the formula  $H_xSi(NR^1R^2)_{4-x}$ , wherein H is hydrogen; x is from 0 to 3; Si is silicon; N is nitrogen; each of R1 and R2 is same or different and is independently selected from the group consisting of H, aryl, perfluoroaryl, C<sub>1</sub>-C<sub>8</sub> alkyl, and C<sub>1</sub>-C<sub>8</sub> perfluoroalkyl. By comparison with the standard SiO<sub>2</sub> gate dielectric materials, these gate dielectric materials provide low levels of carbon and halide impurity.